AMENDMENT RECORD

No. AS43500™-AR

for
Aerospace Standard
No. AS43500-599™

ASPQP™
Aerospace Standards Part Qualification Program
A Program of SAE ITC

To place a document order : SAE ITC web address :	Tel from USA & Canada : 877 606 7323 Tel from outside USA : +1 724 772 7545 Fax : +1 724 776 0790 Email : CustomerService@sae.org http://www.itc.sae.org
SAE ITC values your input. To provide feedback on this document, please visit : https://www.sae.org/standards/content/AS43500AR-4/	

Issued by: **Technical Standards Committee (Aerospace)**
SAE Industry Technologies Consortia (ITC)
Registered No. 3916053 (USA)

© 2020 SAE ITC. **Issue 4 December 2020**

ASPQP
Aerospace Standards Part Qualification Program
A Program of SAE ITC

SAE INDUSTRY TECHNOLOGIES CONSORTIA
AEROSPACE STANDARDS AND PART QUALIFICATION PROGRAM

FOREWORD

On the 1st January 2015 the SAE Industry Technologies Consortia (SAE ITC) acquired the ADS Aerospace Standards, previously known as the Society of British Aerospace Companies (SBAC) Aerospace Standards. The SAE ITC established in 2003 operates as a trade association as part of the SAE International Enterprise, providing a unique framework serving the automotive, aerospace and commercial vehicle sectors. Clients include private companies, government agencies, individuals and trade associations. Building consensus and breakthrough barriers to achieve solutions, and the ways by which those solutions take shape are tailored to each client's individual needs.

The legal obligations and copyright authority of all Aerospace Standards that were issued by the ADS Group Limited are therefore assigned / transferred to the SAE ITC.

These Standards are produced by the SAE ITC with the assistance of, and for the benefit of the Aerospace Industry, as part of a continuous programme of Standardisation for Aerospace application under the control of the Technical Standards Committee (TSC) of the SAE ITC.

SAE ITC Standards are published as part of the series of SAE ITC Aerospace Industry Standards, and where appropriate, additional manufacturing and inspection requirements are issued as Reference Sheets (RS) or Technical Specifications (TS). It is the responsibility of those using or specifying a Standard to ensure the product, process, or manufacturer so used or specified, is appropriate for the task or role in question. The SAE ITC wishes to draw special attention to the fact Technical Specifications (TS) include testing and procedures by which a user or Design Authority can establish whether a particular manufacturer, prima facie, has the capability to produce hardware in accordance with the appropriate standards and related specifications.

The SAE ITC, its servants, or representatives accept no responsibility for the continued quality of hardware items produced against the relevant drawings and specifications; this responsibility remains with the user.

Whilst the SAE ITC takes all reasonable care in the preparation of its Standards, neither the SAE ITC, its officers, employees, servants, agents or representatives, shall have any responsibility or liability whatsoever with respect to any act or omission (whether negligent or not) of whatsoever nature, or in connection with the preparation of the Standards or any part thereof. These responsibilities are those of the user or Design Authority. Users of SAE ITC Standards agree that any such liability on the part of the SAE ITC is excluded to the maximum extent permitted by law. SAE ITC Standards may be changed from time to time, and both users and manufacturers of these parts should ensure they are in possession of the latest issue of the Standards and supporting documentation before adoption or the commencement of production.

It is recommended that Technical Specification TS260, Metallic Materials List of Alternative Material Specifications and Standards Only Authorised for use on SAE ITC Standard Parts, be consulted prior to manufacture of SAE ITC products.

Each Standard is a facsimile or electronic reproduction of a master drawing, and therefore, any outline view scales stated are not necessarily reproduced accurately. A Master Index of all SAE ITC Aerospace Standards is published separately on the SAE ITC website.

All references to Standards include reference to RS and TS publications.

Details of this and any further information can be obtained from the SAE ITC.

SAE Industry Technologies Consortia provides that this standard is published by SAE ITC to advance the state of technical and engineering sciences. The use of this standard is entirely voluntary and this applicability and suitability for any particular use, including any patent infringement arising therefrom, is the sole responsibility of the user.

© 2020 SAE ITC.

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording or otherwise, without prior written permission of SAE ITC.

Doc issue & issue date	Ref : View, Fig, Para , Table etc	Description & Reason of change	Sponsor / Company
Issue 4 December 2020 (note – this AR document did not exist prior to this issue).	General	Format updated to reflect change of organisation name from SBAC thru ADS to SAE ITC. Refer to Foreword for more details.	A.V.Green Phillips Screw Company
	Title	"MACHINE" removed from title as these are forged bolts. "Heat Resisting Alloy Steel" added to indicate material type. Silver coating corrected to state it is only the thread. Thread spec "BS4084" deleted. Strength class classification added to portray similar information shown in British Standards, to ease database searches.	
	Drawing	The drawing has been amended to bring it in line with TS66 issue 6 presentation requirements, which includes the reordering of some notes.	
	Outline Side view	Label pointing at 4,78 (.188) min dimension "WRENCHING CONFIGURATION TO RS680 OVER THIS LENGTH" deleted. Wording now incorporated in new note 12. Dimension "4,78 (.188) min" now appended with "(see note 12)" to suit. Dimension K "To full thread form" was "TO FULL THREAD". Dimension "Thread lead (see note 11)" was "LEAD THREADS (SEE NOTE 9)". Surface finish for plain shank "0,8 (32)" with its symbol moved to correct position. Dimension "Thread runout (see note 11)" was "THREAD RUNOUT (SEE NOTE 9)". "CHAMFER Ø 7,41 (.292)" deleted. Dimension "Thread (see note 9)" amended, was ".375-24UNJF-3A.BS4084". "Shank dia" added to Datum W. "(see Note 10)" added below Thread pitch dia tol box.	
	Outline Head End view	Label "Part mark (see note 6)" amended, was "PART NO. AND MANUFACTURER'S IDENTIFICATION HERE TO TS22".	
	Outline Section Y-Y (with ref to Section Thro Locking Wire Hole) view	Positional tol of locking wire holes to top of head (**X**) & shank (**W**) combined into one tolerance box. For locking wire holes "EQUI SPACED" replaces "45°". Section cross hatch lines removed, to simplify views. Hole dia dim "1,6 H14" removed, as this feature is not a 'fit'.	

cont on next page

Prepared by the Technical Standards Committee (Aerospace) of the SAE ITC. ©2020 SAE ITC.

Doc issue & issue date	Ref : View, Fig, Para , Table etc	Description & Reason of change	Sponsor / Company
Issue 4 cont	Detail Z view	View title amended "**DETAIL-Z ENLARGED**", was "**ENLARGED VIEW AT Z**".	
	Table-1	Table named "**TABLE-1 – GRIP & LENGTH DIMENSIONS**".	
		New Table footnote #1 added "For part numbers AS43508 to AS43519 inclusive, special shank diameter & forged blank requirements apply. See Outline INSET-A for details.".	
		New Table footnote #2 added "For reference, K max values are L nom - 1.000 inches when L ≥ 1.125 inches.".	
	Notes (significant changes)	**Note 1** "Dimensions in mm (inches)." was first part of **Note 12** and read "DIMENSIONS AND TOLERANCES, EXCEPT FOR THREADS, ARE IN MILLIMETRES. INCH CONVERSIONS ARE IN PARENTHESES.".	
		Note 2 "Drawing practice to TS66." was **Note 13**.	
		Note 3 Manufacture & Performance, was **Note 1** and amended, so that "INSPECTION" now reads "Performance".	
		Note 4 Material, was **Note 2** and description expanded to include the latest & correct material code designation "Heat resisting alloy steel X12CrNiMo12 (FE-PM1502) to BS S 159", was "BS S159".	
		Note 5 Treatment, was **Notes 3** & **4** and changed to "Heat treat as defined in performance specification TS22, to achieve a hardness of 33-41 HRC or 343-410 HV".	
		Note 3 (old) was "HARDNESS:- ROCKWELL C33-41 ASTM E18 OR 30N 54-61 ASTM E18 VICKERS 343-410 HV".	
		Note 4 (old) was "HEAT TREATMENT:- REFER TO TS22".	
		Note 6 (new) "Part mark part no. & manufacturer's identity code where shown, in accordance with RS610 Method 2 or 4b." added, was that as described under Outline Head End view.	
		Note 7 Protective Finish, was **Note 5**, "Silver coat threads to DTD939, EN 2786 or AMS2411. Coating thickness 0,005 to 0,015mm (.0002" to .0006"). Area of coating may be extended locally onto the plain shank for ease of manufacture. All dimensions shall be met after coating." was "SILVER COAT THREADS 0,005-0,015 (.0002-.0006) THICK TO DTD 939. ALL DIMENSIONS TO BE MET AFTER COATING. AREA OF COATING MAY BE EXTENDED TO EASE MANUFACTURE".	
		Note 8 a) Dimension tols, was the last sentence of **Note 12**, plus an angular tolerance of ±1° added.	
cont on next page		**Note 8 b)** Surface texture, was **Note 6**.	

Doc issue & issue date	Ref : View, Fig, Para , Table etc	Description & Reason of change	Sponsor / Company
Issue 4 cont Issue 4 concluded	Notes cont	**Note 8 c)** Deburr, was **Note 11**. **Note 9** Thread, was **Note 8**. ".375"-24 UNJF class 3A to ISO 3161 (BS A 346) or SAE AS8879." was transferred from Outline Side View thread dimn, with reference to ISO 3161 (BS A 346) replacing withdrawn BS 4084 & addition of the equivalent SAE spec. **Note 10** "For bolts having a shank length of less than 1.5 x nominal bolt dia, the thread pitch dia may be used as the datum & the concentricity tolerance applied to the shank.". was "FOR BOLTS HAVING A SHANK LENGTH OF LESS THAN 1.5 x NOMINAL BOLT DIAMETER, THREAD PITCH DIAMETER SHOULD BE MADE THE DATUM AND THE CONCENTRICITY TOLERANCE APPLIED TO THE SHANK". **Note 11** Thread lead & runout, was first sentence of **Note 9**. Second sentence "INCOMPLETE THREADS MUST NOT ENCROACH ON UNDERHEAD RADIUS" deleted, as already covered by RS678 requirements. **Note 12** (new) "Wrenching configuration to RS680 shall apply over this dimension." added, was a label on Outline Side View. **Note 13** Underhead radius, was **Note 7**. **Note 15** (new) "Qualification is required to TS202 (see sheet 1)" added. **Note 16** Qualified manufacturers, was **Note 15**. **Note 17** (new) – Standard note to check for Protection Rights & liability infringements, added. **Note 18** (new) Listed Publication bodies, was an unspecified note. Updated to reflect addition of SAE, AMS & AS, EN & ISO specs & organisation change from SBAC to SAE ITC.	
		To create your next entry, use menu command route : **"Table – Insert – Rows Below"** **Never use Split Cells.**	